

MISSOURI ENGINEERING JOB APPROVAL AUTHORITY

NAME _____ TITLE _____ GRADE _____ LOCATION _____

DELEGATED BY _____ TITLE _____ DATE _____

(Responsible Engineer)

CONCURRED BY _____ TITLE _____ DATE _____

(Line Supervisor)

ETHICS STATEMENT

By signing this form, I agree to utilize my assigned engineering approval authority only for work that I am competent and qualified to perform. I will seek assistance from others when complicating factors warrant.

I also understand that conservation practices can have negative effects on some resources. I agree to consider the impacts of practices on all resources before recommending their use.

I agree with the assigned levels of authority and have received the proper training and experience for these practices.

(Employee Signature)

REVIEW

The form will be reviewed with the employee and revised as needed. See NEM 501.04(b)(5).
If no significant changes are made, the following table will be used to indicate that the review has been made by the appropriate engineering personnel.

Reviewed By	Title	Comments	Date

Notes

1. Approval is issued based on the individual's training, experience, and demonstrated competence. increased authorities (based on local needs and individual interest) are encouraged for all individuals.
2. Employees shall not approve designs or certify construction for practices that exceed their maximum approval limit. However, employees (working under the direction of person approving) can complete work on practices above their limit and submit for approval.
3. The Responsible Engineer may recommend approval authority only up to his/her approval authority.
4. The controlling factor that results in the highest classification determines the Job Class. For example, a water and sediment control basin with a fill height of 7 feet (CLASS III) and an underground outlet -- 5 inch diameter (Class I); therefore it is Job Class III.
5. Engineering practices not included in this chart or more complex practices shall be sent with documentation to the State Conservation Engineer for approval.
6. Job approval classes marked with an asterisk (*) may only have Design job approval delegated to engineers. Inventory and Evaluation (I&E) and Construction job approval authority may be delegated to any qualified personnel for job classes as allowed by NEM 501.
7. DEFINITION OF MAXIMUM APPROVAL LIMIT COLUMNS

Inventory and Evaluation (I&E) - On-site observations of an exploratory nature and preparation of sound alternative solutions of sufficient intensity for the cooperator to make treatment decisions. This may require assistance from higher levels for large or more complex jobs. (See NEM 501 and 510)

Design - Designing and checking all aspects of the supporting data, drawings, and specifications to ensure that the planned practice will meet the purpose for which it is installed. This also includes setting any specific inspection requirements. Approval signature is required. (See NEM 501 and 511)

Construction (Const.) - Surveys, layout, staking, inspection of materials and work, and making tests to determine that the job meets specifications. Jobs where letters of appointment for inspection are issued are not included on this chart. Approval signature to certify construction is required. (See NEM 501 and 512)

Unit Abbreviations

ac - Acre	cu ft - cubic feet	in - inch	psi - pounds per square inch
Agr - Agriculture	fps - feet per second	Land Appl - Land Application	Sed - Sediment
AU - Animal Units,	ft - feet	lbs - pounds	sq ft - square feet
equivalent to 1,000 lb. live weight	gal - gallon	Mech - Mechanical or structural	sq mi - square mile
cfs - cubic feet per second	gpm - gallon per minute	mi - mile	Veg - Vegetated
cfm - cubic feet per minute	Grav - Gravity		

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				Job Class					Maximum Approval Limit		
Code	Practice Name	Controlling Factors	Units	I	II	III	IV	V	I & E	Design	Const.
	Any Practice	Hazard potential as defined in NEM §503	class	Low	Low	Low	Low	Low			
DAMS AND STRUCTURES											
402 410 436 378e 350o	Dam Grade Stabilization Structure Irrigation Reservoir Pond (Embankment) Sediment Basin (other than part of a waste management system)	All must have relatively impervious cutoff, simple foundation needs and use standard detail drawings approved by the SCE. Dam classification must be low hazard (formerly class "a") and the product of storage (acre-feet) times effective height (feet) equals 3,000 or less. All structures must have an overall height <35' for these approval limits to apply.									
	All Dams and Structures	Effective Height 1/ Product-Storage x Effective Height Drainage Area	ft ac-sq ft ac	15 200 20	20 500 100	25* 1,000* 250*	30* 2,000* 640*	35* 3,000* 12,800*	none none none	none none none	none none none
	Prefabricated Conduit	Diameter	in	8	12	24*	36*	48*	none	none	none
	Box Culvert (Standard Design)	End Area	sq ft	-	-	6*	9*	All*	none	none	none
	Drop Spillway-Box Inlet	Net Drop Weir Capacity	ft cfs	2 50	3 100	4* 200*	5* 300*	All* All*	none none	none none	none none
	Drop Spillway-Straight	Net Drop Weir Depth Weir Capacity	ft ft cfs	2 1.5 100	4 2 200	5* 2.5* 300*	6* 3* 400*	All* All* All*	none none none	none none none	none none none
	Chute Spillway-Geotextile Reinforced Vegetated	Net Drop Design Capacity	ft cfs	3 10	6 20	6* 20*	6* 20*	All* 3/ All* 3/	none none	none none	none none
	Chute Spillway-Concrete Block	Net Drop Weir Depth Weir Capacity	ft ft cfs	4 1.0 50	6 1.5 75	8* 2.0* 100*	8* 2.5* 150*	All* All* All* 3/	none none none	none none none	none none none
	Chute Spillway-Rock Riprap	Net Drop Weir Depth Weir Capacity	ft ft cfs	- - -	- - -	6* 1.5* 50*	8* 2.0* 100*	All* All* All*	none none none	none none none	none none none
560	Access Road (Private) (Soil or Gravel Surface)	Culvert, inside diameter (includes stormwater conduits not associated with roads)	ft	1	2	4*	5*	6*	none	none	none
309	Agrichemical Handling Facility	Containment Capacity	gal	none	none	1,500*	2,500*	All*	none	none	none
371	Air Filtration and Scrubbing	Air Flow	cfm	-	-	-	-	All*	none	none	none
366	Anaerobic Digester	Number	each	none	none	none	none	All*	none	none	none

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Code	Practice Name	Controlling Factors	Units	Job Class					Maximum Approval Limit		
				I	II	III	IV	V	I & E	Design	Const.
316	Animal Mortality Facility 2/	Incinerator Capacity	lbs	400	600	800	1,000*	All*	none	none	none
		Composter Capacity	cu ft	1,000	2,000	4,000	7,000*	All*	none	none	none
450	Anionic Polyacrylamide (PAM) Application	Area of Benefit	ac	40	80	160	All*	All*	none	none	none
326	Clearing and Snagging	Drainage Area	sq mi	-	-	1	4	All*	none	none	none
317	Composting Facility 2/	Capacity-manure or organic product	cu ft	1,000	2,000	4,000	7,000*	All*	none	none	none
356	Dike	Water Height	ft	-	-	3*	6*	12*	none	none	none
		Hazard	class	-	-	III*	III*	III*	none	none	none
362	Diversion	Design Capacity	cfs	50	100	300	500*	All*	none	none	none
554	Drainage Water Management	Subsurface Drainage System Inside Diameter	in	8	12	16	24*	All*	none	none	none
		Surface Drainage System Acres Drained	ac	40	160	320	640*	All*	none	none	none
432	Dry Hydrant	Type	-	Impoundment	Impoundment	Impoundment	In-stream*	All*	none	none	none
		Pump Lift	ft	6	8	10	15*	All*	none	none	none
		Nominal Diameter	in	6	6	8	8*	All*	none	none	none
374	Farmstead Energy Improvements	-	each	-	-	-	-	All*	none	none	none
393	Filter Strip	Distance to Stream, Surface Drain, or Pond	ft	1,000	500	200	All	All*	none	none	none
		Pollutant	-	-	-	Sed	Sed	Sed & Agr Waste*	none	none	none
412	Grassed Waterway	Design Capacity	cfs	100	200	300	500*	All*	none	none	none
561	Heavy Use Protection Area	Surface Protection Method	type	Veg	Gravel	Gravel	Impervious*	All*	none	none	none
464	Irrigation Land Leveling	Area Graded	ac	40	80	160	320	All*	none	none	none
430	Irrigation Pipeline	Pipeline Capacity greater than 50 psi	gpm	-	1,000	2,000	3,000*	3,500*	none	none	none
		Pipeline Capacity 50 psi or less	gpm	-	1,000	2,750	4,000*	5,000*	none	none	none
441	Irrigation System, Microirrigation	Area Irrigated	ac	-	Windbreak (temp.)	10	40*	All*	none	none	none
442	Irrigation System, Sprinkler	Area Irrigated	ac	20	80	160	320*	All*	none	none	none
		Length of Pivot	ft	530	1,100	1,500	2,200*	All*	none	none	none
443	Irrigation System, Surface and Subsurface	Surface Area Irrigated	ac	40	80	160	320*	All*	none	none	none
		Subsurface Area Irrigated	ac	20	40	80	All*	All*	none	none	none

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				I	II	III	IV	V	I & E	Design	Const.
447	Irrigation System, Tailwater Recovery	Acres Served	ac	20	40	80	160	All*	none	none	none
449	Irrigation Water Management	Area	ac	40	80	160	320	All	none	none	none
468	Lined Waterway	Design Capacity	cfs	-	50	100	200	All*	none	none	none
516	Pipeline	Length (from source to farthest end)	mi	0.25	0.5	1	2*	All*	none	none	none
		Diameter	in	1.25	2	2	3*	All*	none	none	none
		Pressure (max pressure anywhere in system)	psi	40	60	80	80*	300*	none	none	none
		Delivery System	type	Grav Pump	Grav Pump	Grav, Siphon Pump	Grav, Siphon, Pump*	Grav, Siphon, Pump*	none	none	none
378x	Pond (Excavated)	Surface Area at Design High Water	ac	0.2	0.5	1	2	All*	none	none	none
521	Pond Sealing or Lining (A,B, or C)	Surface Area at Design Depth	ac	0.2	0.5	1.0	1.0*	All*	none	none	none
		Design Depth	ft	-	-	8	10*	All*	none	none	none
533	Pumping Plant	Axial flow pump capacity	gpm	-	-	-	10,000*	50,000*	none	none	none
		Centrifugal & turbine pump capacity	gpm	-	30	150	1,000*	3,500*	none	none	none
		Centrifugal pump static head	ft	-	150	150	200*	350*	none	none	none
		Turbine pump static head	ft	-	-	-	300*	500*	none	none	none
558	Roof Runoff Structure	Total Roof Area	sf	-	-	5,000	20,000	All*	none	none	none
367	Roofs and Covers (For pre-engineered structures only)	Area of Roof or Cover	sq ft	none	none	2,500	20,000	All*	none	none	none
350	Sediment Basin 2/ (Part of Animal Waste Management System)	Effective Height of Dam	ft	8*	10*	15*	30*	35*	none	none	none
		Design Capacity - 1000 lb. Animal	AU	20*	50*	100*	500*	All*	none	none	none
632	Solid/Liquid Waste Separation Facility	1,000 pound animal units served	AU	-	-	-	1,000*	All*	none	none	none
572	Spoil Spreading	Length of man-made channel requiring spoil spreading	mi	-	-	1	4	All	none	none	none
574	Spring Development	Capacity	gpm	5	10	20	50	All*	none	none	none
570	Stormwater Runoff Control (All rooftop storage is considered Class V)	Area	ac	1	5	10	25	All*	none	none	none
578	Stream Crossing	Drainage Area	ac	250	500	1,000	2,500*	All*	none	none	none
		Height of bank	ft	4	6	8	10*	All*	none	none	none

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578	Stream Crossing	Culvert size (inside dia.)	in	18	24	36	48*	All*	none	none	none
580	Streambank and Shoreline Protection	Bankfull Capacity	cfs	-	-	500*	1,000*	5,000*	none	none	none
		Bankfull Velocity	fps	-	-	5*	7*	10*	none	none	none
		Channel Depth (low bank)	ft	-	-	6*	8*	All*	none	none	none
		Drainage Area	sq mi	-	-	10*	25*	All*	none	none	none
		Water Height above shoreline	ft	-	-	-	1.5*	3*	none	none	none
587	Structure for Water Control										
	Inlet Water Control Structure	Capacity	cfs	15	50	100	200*	All*	none	none	none
		Weir Height	ft	2	4	5	6*	All*	none	none	none
	Slide Gate	Capacity for head 10' or >	cfs	none	50	75	100*	All*	none	none	none
		Capacity for head < 10'	cfs	10	50	200	400*	All*	none	none	none
	Siphon	Head	ft	none	4	6*	8*	All*	none	none	none
		Capacity	cfs	none	10	30*	60*	All*	none	none	none
		Max Head Loss/100'	ft	none	none	0.5*	0.5*	All*	none	none	none
606	Subsurface Drain	Inside Diameter	in	8	12	16	24	All*	none	none	none
607	Surface Drain	Area Drained	ac	40	160	320	640	All*	none	none	none
608	Surface Drain - Main or Lateral	Design Capacity	cfs	40	100	200	400	1,000*	none	none	none
		Velocity	fps	3	5	8	10	10*	none	none	none
		Area Drained	ac	160	320	640	640	640*	none	none	none
600	Terrace	Area Controlled (total system)	ac	20	40	80	160	All*	none	none	none
568	Trails and Walkways	Length	mi	0.2	0.5	1	2	All*	none	none	none
620	Underground Outlet	Diameter	in	8	12	18	30*	All*	none	none	none
630	Vertical Drain	Diameter	in	-	-	12	24	All*	none	none	none
360	Waste Facility Closure 2/	Area of Facility being closed	sq ft	10,000*	20,000*	40,000*	80,000*	All*	none	none	none
633	Waste Recycling	Refer to Nutrient Management (590) Standard (Consult Nutrient Management Specialist)	-	-	-	-	-	-	none	none	none
313	Waste Storage Facility 2/, 4/	Design Capacity, 1,000 lb Animal Units	AU	100*	300*	900*	3,000*	All*	none	none	none
		Storage Volume	cu ft	-	100,000*	300,000*	500,000*	2,000,000*	none	none	none
		Fill Height (Earthen Structures)	ft	-	-	8*	15*	35*	none	none	none
634	Waste Transfer 2/	Design Capacity	gpm	-	100*	300*	500*	All*	none	none	none
		Volume	cu ft	-	300,000*	500,000*	1,000,000*	All*	none	none	none

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359	Waste Treatment Lagoon 2/, 4/ (Refer to Dams and Structures)	Aerobic - Surface Area	ac	-	-	6*	8*	25*	none	none	none
		Anaerobic - Total Volume	cu ft	-	300,000*	500,000*	1,000,000*	2,000,000*	none	none	none
638	Water and Sediment Control Basin	Fill Height	ft	4	5	8	12	All*	none	none	none
642	Water Well 9/	Diameter	in	4	6	8	12	All	none	none	none
		Estimated Depth	ft	-	100	200	300	All	none	none	none
351	Water Well Decommissioning 9/	Estimated Depth	ft	50	150	250	500	All	none	none	none
614	Watering Facility	Capacity	gal	200	500	1,000	2,000	All*	none	none	none
WETLANDS											
658	Wetland Creation										
659	Wetland Enhancement										
657	Wetland Restoration										
	Non-Levee Protected System 5/	Height of Wetland Management Dike	ft	-	-	3	4*	All*	none	none	none
		Drainage Area to Pool Area ratio 6/, 7/	ac:ac	-	-	5	20*	All*	none	none	none
		Total Wetland Complex Pool Area 8/	ac	10	40	160	300*	All*	none	none	none
	Levee Protected System 5/	Height of Wetland Management Dike	ft	3	3	4	5*	All*	none	none	none
		Drainage Area to Pool Area ratio 6/, 7/	ac:ac	3	3	5	20*	All*	none	none	none
		Total Wetland Complex Pool Area 8/	ac	10	50	200	500*	All*	none	none	none

- 1/ Effective Height - Difference in elevation between the auxiliary spillway crest (top of embankment if no auxiliary spillway) and the lowest point in the original cross section along the centerline of the embankment.
- 2/ This practice, excluding pre-engineered building/roofs used for dry litter storage, mortality facility, and composter facility, will involve peer review by the state office. It may also include other practices that are a part of the waste management plan.
- 3/ All - Up to maximum limit shown on State Conservation Engineer approved standard drawing.
- 4/ Other factors are same as for pond.
- 5/ Flood protection levees, not wetland management dikes, that will be maintained for flood protection after wetland restoration is complete.
- 6/ Excludes excavated pools without management berms.
- 7/ Drainage area includes the pool area plus all of the land area that drains to the pool.
- 8/ Total wetland pool complex is the sum of the surface areas at the highest water control structure crest elevation(s) of all pools associated with the site.
- 9/ Job approval for I&E only, design and construction must be by a certified well installer licensed by the State of Missouri in accordance with MO Well Construction Rules or landowner as permitted by law.